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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,470	10/22/2002	Haren S. Gandhi	FCHM 0119 PUS / 201-0877	5652
28395	7590	07/05/2006		EXAMINER
BROOKS KUSHMAN P.C./FGTL				DUONG, THANH P
1000 TOWN CENTER				
22ND FLOOR			ART UNIT	PAPER NUMBER
SOUTHFIELD, MI 48075-1238				1764

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/065,470	GANDHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tom P. Duong	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 February 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-31 and 33-39 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-31,33-35 and 39 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

Applicants' remarks and amendments filed on February 13, 2006 have been carefully considered. Claims 1-4, 8, 18, 25, and 30 have been amended. Claim 32 has been canceled. Claims 1-31 and 33-39 are pending in this application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 9-12, 14-17, 19, 30-31, 33-34, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Kinugasa et al (6,109,024). Note, the system is being examined as an apparatus. With respect to claims 1, 19, 30, 39, Kinugasa et al discloses an emission control system comprising: a lean NOx trap 70a and 70b in communication with an exhaust stream for reducing NOx emissions, wherein the lean NOx trap is optimized for NH<sub>3</sub> generation (Col. 8, lines 61-67) by removing oxygen storage capacity (Col. 8, lines 37-43) of the lean NOx trap; and a NH<sub>3</sub>-SCR catalyst 9 in communication with the exhaust stream for adsorbing NH<sub>3</sub> and wherein the NH<sub>3</sub> adsorbed by the NH<sub>3</sub>-SCR catalyst reacts with NOx in the exhaust stream to improve the reduction of NOx and NH<sub>3</sub>, the NH<sub>3</sub>-SCR catalyst being separate from and

downstream from the lean NOx trap (see, for example, Fig. 26, col. 8, line 6 to col. 9, line 41). With respect to claims 9-12, 14, 31, 33-34, and 39, Kinugasa et al discloses that the system is optimized to produce sufficient amount of NH<sub>3</sub>, and that the lean NOx trap comprises precious metal, such as Pt, Pd, and etc., and NOx storage material, such as alkali metal, etc. (col. 2, line 49 to col. 3, line 42 and Col. 9, lines 3-16). With respect to claims 15-17, Kinugasa et al discloses that the NH<sub>3</sub>-SCR catalyst comprises material for NH<sub>3</sub> adsorbing material wherein the NH<sub>3</sub> adsorbing material is capable of converting NOx and NH<sub>3</sub> to nitrogen; the NH<sub>3</sub>-SCR catalyst comprises a base metal, such as Cu, and a support of zeolite (col. 9, line 3 to col. 10, line 65). Note, instant claims 1, 9-12, 14-17, 19, 30-31, 33-34, and 39 structurally read on the apparatus of Kinugasa et al.

2. Claims 2-8, 18, and 20-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinugasa et al (6,109,024) in view of Fuwa et al (6,345,496). The apparatus of Kinugasa et al is substantially the same as that of the instant claims, but is silent as to whether the NOx trap and the NH<sub>3</sub>-SCR catalyst may be alternating layers/zones in a single shell or substrate. However, Fuwa et al discloses the conventionality of providing a control system in which the NOx trap and the NH<sub>3</sub>-SCR catalyst are alternating layers/zones in a single shell/substrate or mixed to form a single layer on one substrate (Col. 25, line 50 to Col. 26, line 7; Col. 27, lines 13-23; Col. 30, line 45 to Col. 31, line 6 and Figs. 39, 41A and 41B). It would have been obvious to one having ordinary skill in the art to construct the system of Kinugasa et al so as forming

the NOx trap and the NH<sub>3</sub>-SCR catalyst in alternating layers/zones in a single shell/substrate or a single layer on one substrate to provide good purification of the exhaust gas while ensuring the endurance of the NH<sub>3</sub>-SCR catalyst or make the purification device simpler as taught by Fuwa et al, and since use of such is conventional in the art and no cause for patentability here. It would have been obvious to one having ordinary skill in the art to select an appropriate dimension for each zone in the system since it has been held that where the general conditions of a claim are disclosed in the prior art, merely discovering the relative dimension involves only routine skill in the art. *In re Gardner v. TEC systems, Inc.* 725 F.2d 1338, 220 USPQ 777.

3. Claims 13 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinugasa et al '024 in view of Yamada et al (6,221,804). The apparatus of Kinugasa et al is substantially the same as that of the instant claims, but fails to disclose the specific material for the lean NOx trap as claimed. However, Yamada et al discloses that the lean NOx trap further comprises a composite of cerium and zirconium (col. 6, lines 3-45). It would have been obvious to one having ordinary skill in the art to provide a composite oxide of cerium and zirconium in the lean NOx trap material of Kinugasa et al so as to provide high thermal resistance for the system as taught by Yamada et al.

***Response to Arguments***

Applicant's arguments filed 2/13/06 have been fully considered but they are not persuasive. The art rejection 102(b) anticipated Kinugasa et al. (EP 773,354) has been withdrawn and the argument is moot. (1) With respect to the argument of Kinugasa 6,109,024 fail to disclose the oxygen storage capacity, Examiner respectfully disagrees. Kinugasa '024 discloses the NOx absorbing-reducing catalyst 70a and 70b is capable of operating under a low oxygen concentration (Col. 8, lines 37-43) or removing oxygen content and the NOx absorbing reducing catalyst can be used to convert or generate NH<sub>3</sub> in lieu of the three-way catalyst (Col. 8, lines 61-67). (2) With respect to the argument of Fuwa et al. '496 fail to disclose the lean NOx trap positioned upstream and/or over the bottom NH<sub>3</sub>-SCR catalyst, Examiner respectfully disagrees. Kinugasa '024 discloses the NOx-OR catalyst 10b is upstream of the NH<sub>3</sub>-AO catalyst 10a as shown in Figure 39, and Kinugasa also shows alternative embodiment where the NOx-OR catalyst 10b layer is positioned on top of the NH<sub>3</sub>-AO catalyst 10a layer as shown in Figure 41A.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Duong  
June 28, 2006

Tb



Glenn Caldarola  
Supervisory Patent Examiner  
Technology Center 1700